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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,174	01/26/2004	Toru Tanzawa	248110US2S	6702

22850 7590 02/17/2005

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EXAMINER	
NGUYEN, HIEP	

ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/763,174	TANZAWA ET AL.	
	Examiner	Art Unit	
	Hiep Nguyen	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *9-15* is/are allowed.

6)☒ Claim(s) *1,2,4-8 and 16-20* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01-26-04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 6-8 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 1 recites a circuit comprising **a comparison circuit** that receives the outputs of the first and second voltage/current conversion circuits (figure 4). Claim 6 recites a circuit comprising first and second voltage/current conversion circuits having outputs **directly connected to each other** (figure 13). Therefore, claims 6-8 do not further limit the subject matter of claim 1.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-8 and 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction and/or clarification is required.

Regarding claim 6, the recitation "wherein an output terminal of the first voltage/current conversion circuit and an output terminal of the second voltage/current conversion circuit are **directly connected to each other** and form one output end" is indefinite because it is misdescriptive. The parent claim 1 reads on figure 4. According to claim 1, the outputs of the first and second voltage/current conversion circuits are inputted to the inputs of a comparison circuit. In contrary, claim 6 recites that the outputs of the first and second voltage/current conversion circuit are connected to each other.

Claim 16 is indefinite because it is not clear **what drawing the claimed circuit reads on.** Assume that claim 16 reads on figure 3. Figure 3 does not show "**an inputted signal**" and "**an inputted reference voltage signal**" as inputs to the level detector (100). Figure 3 shows that the level detector (100) receives the **two output signals (OUT) and (OUTB) from the amplifier (100)**. The recitation " an amplification circuit to which the control signal of the

signal level detector is inputted, and which outputs an output signal obtained by amplifying **an inputted reception signal** with an amplification factor according to the control signal and determines the output signal as the detection signal which inputted to the signal level detector" is indefinite because it is not clear as to the " an inputted reception **s**ignal" is the same or different than the "a control signal" on lines 10. As understood by the examiner, "a control signal" and " an inputted reception signal" are the **same signal** that is the output signal of the level detector (100). The Applicant is requested to show what are "an inputted signal", "an inputted reference voltage signal", "a control signal", "an output signal" and "an inputted reception signal". The Applicant is also requested to explain the **differences** between the "inputted signal", "an inputted reference voltage signal" and "an output signal"; between the "a control signal" and "an inputted reception signal".

Regarding claim 18 the recitation "wherein the control signal has a third voltage when the output signal from the amplification circuit is a first voltage having **a first amplitude**, and the control signal has a **fourth voltage** larger than the **third voltage** when the output signal from the amplification circuit is **a second voltage** having a **second amplitude** larger than the **first amplitude**" is totally confusing. It is not clear what the "first amplitude", " a fourth voltage", " the third voltage", "the second voltage", "a second amplitude" and "a first amplitude" are meant by. The Applicant is requested to show those "elements" in the drawing/ diagram and to explain how these "elements" are correlated to each other. The same rationale is applied to claim 19.

Claims 7, 8,17, 19 and 20 are indefinite because of the technical deficiencies of claims 6 and 16.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102 (b) as being anticipated by Glass et al. (US Pat. 6,121,913).

Regarding claim 1, figure 1 of Glass shows first and second voltage/current conversion circuits (1, 11) and a comparison circuit (100).

Regarding claim 2, the inputs to the voltage/current conversion circuit are differential signals and reference signals.

Claims 1, 2 and 6-8 are rejected under 35 U.S.C. 102 (b) as being anticipated by Tanimoto (US Pat. 6,320,435).

Regarding claims 1, 2 and 6, figure 5 of Tanimoto shows a first and second voltage/current conversion circuits (13A, 13B) receiving differential input signals and having outputs "coupled" directly to a "comparison circuit" that is the junction node.

Regarding claims 7 and 8, since the outputs of the first and second voltage/current conversion circuits (13A, 13B) are connected to each other, the first and second currents are charging/discharging currents.

Claims 1, 2 and 6-8 are rejected under 35 U.S.C. 102 (b) as being anticipated by Park et al. (US Pat. 5,773,999).

Regarding claims 1, 2 and 6, figure 3 of Park shows a first and second voltage/current conversion circuits (MP1, MN1) receiving input signals and having outputs "coupled " directly to a "comparison circuit" that is the junction node.

Regarding claims 7 and 8, since the outputs of the first and second voltage/current conversion circuits (13A, 13B) are connected to each other, the first and second currents are charging/discharging currents. Note that circuit (MP1) and (MN1) are turned on/off one at a time.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glass et al. (US Pat. 6,121,913) in view of Kraz (US Pat. 6,563,319).

Regarding claims 4 and 5, figure 1 of Glass includes al the limitations of claims 4 and 5 except for the limitation that there are capacitors and resistors coupled between the outputs of the first and second voltage/current conversion circuits and the ground. Figure 2 of Kraz shows a voltage/current conversion circuit having a capacitor (64) and a resistor (62) coupled between the output to the ground for charging and holding the output current of the voltage/current conversion circuit and for determining the decay of the output signal (col.5, lines 61-65; col. 6, lines 10-13). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to implement the capacitors and the resistors taught by Kraz into the circuit of Glass between the outputs of the voltage/current conversion circuits and the ground for charging and holding the output current of the voltage/current conversion circuits and for determining the decay of the output signal.

Allowable Subject Matter

Claims 9-15 are allowed.

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 16-20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 9-15 are allowed because the prior art of record (USP. 6,121,913) fails to teach or suggest a signal level detector comprising first and second squaring circuits that square respectively the components of an input amplitude of a first voltage signal and an amplitude of a reference voltage signal as called for in claim 9.

Claim 3 is objected to because the prior art of record (USP. 6,121,913) fails to teach or suggest first and second voltage/current conversion circuits that square the inputted signal and the inputted reference signal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hiep Nguyen whose telephone number is (571) 272-1752. The examiner can normally be reached on Monday to Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hiep Nguyen
02-09-05

MY-TRANG NU TON
PRIMARY EXAMINER
2/15/05